

WHAT IS CLAIMED:

1. A method of controlling a DC-DC converter including a first series circuit including two switching devices connected between a positive terminal and a negative terminal of a DC power supply that supplies a DC input voltage, and a second series circuit including one or more capacitors and a primary winding of a transformer connected to one of the switching devices, the DC-DC converter switching on and off the switching devices, whereby to generate positive and negative voltages across a secondary winding of the transformer, and the DC-DC converter conducting half-wave rectification or full-wave rectification of the positive and negative voltages generated across the secondary winding of the transformer, thereby to obtain a DC output voltage, comprising:

changing the switching frequency of the switching devices; and

changing the on-off ratio of the switching devices.

2. The method according to Claim 1, wherein the on-off ratio is changed in response to the output voltage and the switching frequency is changed in response to the input voltage supplied by the DC power supply.

3. The method according to Claim 1, wherein the switching frequency is changed while the on-off ratio is fixed at a certain value, and wherein the on-off ratio is changed while the switching frequency is fixed at a predetermined value after the switching frequency has

frequency has reached the predetermined value, thereby preventing the switching frequency from exceeding the predetermined value.

4. A DC-DC converter comprising:

5 a first series circuit including two switching devices connected between a positive terminal and a negative terminal of a DC power supply that supplies a DC input voltage;

a second series circuit including one or more capacitors and a primary winding of a transformer connected to one of the switching devices;

10 switching frequency changing means for changing a switching frequency of the switching devices; and

on-off ratio changing means for changing a on-off ratio of the switching devices;

wherein switching of the on and off the switching devices generates positive and negative voltages across a secondary winding of the transformer; and

15 wherein the DC-DC converter conducts half-wave rectification or full-wave rectification of the positive and negative voltages generated across the secondary winding of the transformer thereby to generate a DC output voltage.

5. The DC-DC converter as claimed in claim 4, wherein the on-off ratio changing means changes the on-off ratio in response to the output voltage and the switching frequency changing means changes the switching frequency in response to the input voltage supplied by the DC power supply.

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6. The DC-DC converter as claimed in claim 4, wherein switching frequency changing means changes the switching frequency while the on-off ratio is fixed at a certain value, and wherein on-off ratio changing means changes the on-off ratio while the switching frequency is fixed at a predetermined value after the switching frequency has reached the 10 predetermined value, thereby preventing the switching frequency from exceeding the predetermined value.